From:

Dorsey, Nancy

Sent:

Monday, January 27, 2014 12:36 PM

To:

Overbay, Michael; Lawrence, Rob; Yarbrough, James; Dellinger, Philip; Casso, Ruben; Morton,

Michael

Cc:

Bierschenk, Arnold

Subject:

RE: FYI - Oil & Gas research efforts, including work in OK

I am not familiar with it, but there were no attachments to see the exact reference either.

From: Overbay, Michael

Sent: Monday, January 27, 2014 10:46 AM

To: Lawrence, Rob; Yarbrough, James; Dellinger, Philip; Casso, Ruben; Morton, Michael

Cc: Dorsey, Nancy; Bierschenk, Arnold

Subject: RE: FYI - Oil & Gas research efforts, including work in OK

I am not aware of this, but will ask Nancy Dorsey and Arnold Bierschenk.

Michael Overbay, P.G. Regional Groundwater Center Coordinator US Environmental Protection Agency, Region 6 (214)665-6482

From: Lawrence, Rob

Sent: Monday, January 27, 2014 8:30 AM

To: Overbay, Michael; Yarbrough, James; Dellinger, Philip; Casso, Ruben; Morton, Michael

Subject: FW: FYI - Oil & Gas research efforts, including work in OK

Is anyone familiar with water sampling in Tishomingo OK? Again, if you start at the bottom of the email thread, it appears that this is some initiative that might could out of the Houston Advanced Research Center and its Environmentally Friendly Drilling program.

Rob Lawrence Region 6 Policy Advisor - Energy Issues 214.665.6580

From: McFadden, Angela

Sent: Friday, January 24, 2014 8:32 AM

To: Biddle, Lisa; Matuszko, Jan

Cc: Lawrence, Rob

Subject: RE: FYI - Oil & Gas research efforts, including work in PA

Lisa, the documents I forwarded are all I currently have regarding this research, thanks to Region 6. My understanding is that EPA declined to participate so I wouldn't think they would have the Oklahoma data, but the email chain shows the network involved if you all would like to reach out to RPSEA. I noticed a some familiar names on the distribution list, including Jim Bolander and Roy Harstein, who you all have worked with in the past.

Angela

From: Biddle, Lisa

**Sent:** Thursday, January 23, 2014 7:11 PM **To:** McFadden, Angela; Matuszko, Jan

Subject: RE: FYI - Oil & Gas research efforts, including work in PA

Thanks Angela. Did you receive the data for the field trial near Tishomingo, OK? That is the only mention of data collection related to flowback/produced water characterization, the remaining information is all about air monitoring. And/or do you know anything about the future trials they mention on the last page (bottom) that are planned for Spring 2014?

Thanks, Lisa

Lisa A. Biddle U.S. EPA, Office of Water ph: (202) 566 0350 Biddle.Lisa@epa.gov

From: McFadden, Angela

Sent: Thursday, January 23, 2014 4:06 PM

To: Biddle, Lisa; Matuszko, Jan

Subject: FYI - Oil & Gas research efforts, including work in PA

Includes some wastewater characterization work

From: Lawrence, Rob

Sent: Tuesday, January 21, 2014 3:57 PM

**To:** McFadden, Angela **Cc:** Overbay, Michael

Subject: Oil & Gas research efforts, including work in PA

Angela – I was forwarded this email earlier today and wanted to share it with you since some of the activities will be conducted in PA. While there are several references to EPA Region 6 participation, I do not think that we ever accepted the invitation to take part. It appears that this effort might be an offshoot of the Houston Advanced Research Center (HARC), which has asked me and others in Region 6 to participate in their Environmentally Friendly Drilling Initiative. But to my knowledge, we never consented to the request.

The second document is a PowerPoint presentation that includes activities in PA.

Rob Lawrence Region 6 Policy Advisor - Energy Issues 214.665.6580

From: Yarbrough, James

Sent: Tuesday, January 21, 2014 11:23 AM

To: Lawrence, Rob; Overbay, Michael; Casso, Ruben

Subject: FW: RPSEA Project Update: R-TASC and I-TASC Participation

I have somehow ended up on the mailing list for this group through no initiative of my own. In fact, I think this is connected to the Rich Haut (HARC) invitation to EPA months ago (which we declined).

From: Ann Smith [mailto:apsmith@gsi-net.com]

Sent: Friday, January 17, 2014 4:08 PM

To: Butler, Barbara; Christopher McKelvey (cjmckelv@gw.dec.state.ny.us); dmccusker@nd.gov; Erik Gribbin (Erik.gribbin@tceg.texas.gov); Ford, Robert; Fred Anderson (fjanderson@nd.gov); George Guthrie (George.Guthrie@NETL.DOE.GOV); Gerry Baker (gerry.baker@iogcc.state.ok.us); Gutierrez, Sally; Holly Kneeshaw (<u>hekneesh@gw.dec.state.ny.us</u>); J. Alexandra Hakala (<u>Jacqueline.Hakala@netl.doe.qov</u>); Briskin, Jeanne; Yarbrough, James; Leslie Savage (leslie.savage@rrc.state.tx.us); Ihelms@nd.gov; Mike Smith (mike.smith@iogcc.state.ok.us); Patricia Billingsley (p.billingsley@occmail.occ.state.ok.us); Paul Jehn (pauljehn@gmail.com); Peter Bella (pbella@aacog.com); Peter Pope (peter.pope@rrc.state.tx.us); Ron Dunkin (r.dunkin@occemail.com); Ronald Sloto (rasloto@usgs.gov); Sandra McSurdy (Sandra.McSurdy@NETL.DOE.GOV); Scott Kell (Scott.Kell@dnr.state.oh.us); Seth Pelepko (mpelepko@pa.gov); Tim Baker (T.Baker@occemail.com); A. S. 'Buddy' Wylie (Buddy.Wylie@cabotog.com); Amy Emmert (emmerta@api.org); Ana Djurc (ana.djuric@halliburton.com); Andrew Wharton (andrew.wharton@bg-group.com); Bob Hendricks (Robert, Hendricks@shell.com); Carrie Reese (Carrie, Reese@pxd.com); Cecilie Nygaard (cnyg@statoil.com); Chris Rabideau (<u>CRabideau@chevron.com</u>); Craig Cipolla (<u>ccipolla@hess.com</u>); Curtis Stanley (<u>curtis.stanley@shell.com</u>); Dan Daulton (Daniel.Daulton@bakerhughes.com); Darren Smith (darren.smith@dvn.com); Debby Yost (debby.yost@chk.com); Desikan Sundararajan (DESS@statoil.com); Dunlop, Jenna; Eric Daniels (EricDaniels@chevron.com); Fernando Sierra (fernando.sierra@shell.com); George King (george.king@apachecorp.com); Harley Hopkins (harley.hopkins@exxonmobil.com); Janet Peargin (Janet@chevron.com); Jim Bolander (jim bolander@swn.com); Joe Ferguson (<u>DFerguson3@slb.com</u>); Joe Ryan (joseph.ryan@colorado.edu); John Wehunt (<u>John.B.Wehunt@cop.com</u>); Jonathan Hafer (<u>jhafer@chiefog.com</u>); Joseph Frantz (<u>jfrantz@rangeresources.com</u>); Juliette Diouma Leyris (jule@statoil.com); Keith McLeroy (LMcleroy@slb.com); Keith Rappold (keith.rappold@aramcoservices.com); Lindsay Bass (Lindsay Bass@xtoenergy.com); Mike Bergstrom (Michael.Bergstrom@shell.com); Nan Zhang (nzha@statoil.com); Pam Sbar (pamsbar@gmail.com); Rick Greiner (Rick.Greiner@conocophillips.com); Roxana Herrera (roxana.herrera@bp.com); Roy Hartstein (Roy Hartstein@SWN.COM); Ryan Turner (rxturner@talismanusa.com); Scott Anderson (SAnderson@edf.org); stephanie.fiorenza@bp.com; Steve Freeman (sfreeman@hess.com); Tom Wagner (Tom.Wagner@cabotog.com); Tony Webster (AWebster@hess.com); Trey E Mebane (Trey.Mebane@nov.com); Wanjoo Choi (wcho@statoil.com) Cc: John Connor; Stephen D. Richardson; Lisa Molofsky; Burnett, David (david.burnett@pe.tamu.edu); Susan Stuver; Charlotte Schroeder (cschroeder@rpsea.org); Perry, Kent (kperry@rpsea.org); Rich Haut (rhaut@harcresearch.org); Tom Williams (twilliams@leidlc.com)

Subject: RPSEA Project Update: R-TASC and I-TASC Participation

## Dear Regulatory and Industry - Technical Advisory Steering Committee (R-TASC and I-TASC) Participants,

First, I would like to thank you all for your overwhelming participation on and input to this valuable project. Your comments,-recommendations and interest will ensure that results from this project are meaningful to the wide range of stakeholders who are impacted by unconventional resource development. As you know, this project will culminate in scientifically-based protocols for assessing three important environmental issues associated with shale gas development: i) baseline sampling and stray gas investigations, ii) advanced analytical air monitoring, and iii) flowback/produced water characterization.

As a quick update, during November, December and January, we hosted 6 conference calls to discuss proposed project plans (see attached TASC Presentation). We received feedback from over 40 participants from Industry (e.g., Apache, Chevron, Exxon, Shell, Hess, Statoil and Schlumberger), regulatory agencies (e.g., NDDMR, NYSDEC, TRRC, PaDEP, USEPA) and Government (e.g., DOE NETL, USGS), who provided written and/or verbal feedback on our Workplan. The attached Memorandum provides a brief summary of that input. Please feel free to contact us with any further questions or comments on our plans.

## Next steps include:

Baseline Sampling and Stray Gas Investigation: continuing temporal variability field program and commencing sampling variability sampling;

**Advanced Analytical Air Monitoring**: continuing pilot testing of open-path infrared measurement technology and review of alternate sampling technologies;

Flowback/Produced Water Characterization; development of preliminary report on micro-filtration and onsite GC/MS technologies for removal/measurement of TSS.

Again, we thank you for your involvement on this project. We appreciate your interest and will keep you updated on our progress.

Ann

Ann P. Smith, P.E., BCEE
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